VAPORIZING REACTANT LIQUIDS FOR CHEMICAL VAPOR DEPOSITION FILM PROCESSING

Abstract of the Disclosure

The disclosure relates to a vaporizer valve which accepts a carrier gas and a pressurized liquid and forms a mixture of the carrier gas and vaporized liquid. An internal cavity receives the carrier gas through a carrier aperture and the liquid through a liquid aperture, and the mixed gas and vapor are exhausted out of the cavity via a third aperture. A moveable diaphragm disposed adjacent to the liquid aperture forms a vaporization region having a pressure gradient. The liquid passing through this pressure gradient vaporizes due to expansion. By controlling the diaphragm position with a feedback control circuit responsive to a liquid flow rate monitor, the liquid flow rate may be controlled independently of the carrier gas flow rate.